

CLAIMS

What is claimed is:

1. A method of training a neural network, the method comprising:  
creating a model for a desired function as a multi-dimensional function;  
determining if the created model fits a simple finite geometry model;  
generating a Radon transform to fit the simple finite geometry model;  
feeding the desired function through the Radon transform to generate weights; and  
training a multilayer perceptron of the neural network using the weights.
2. The method of claim 1 wherein the neural network is a first neural network and the Radon transform is a second neural network so that the first neural network is trained by the second neural network.
3. The method of claim 1 wherein the first neural network and the second neural network are dual to each other.
4. A system for training a neural network, the system comprising:  
means for creating a model for a desired function as a multi-dimensional function;  
means for determining if the created model fits a simple finite geometry model;  
means for generating a Radon transform to fit the simple finite geometry model;  
means for feeding the desired function through the Radon transform to generate weights; and  
means for training a multilayer perceptron of the neural network using the weights.
5. A computer readable medium comprising instructions, which when executed on a processor, perform a method of training a neural network, the method comprising:  
creating a model for a desired function as a multi-dimensional function;  
determining if the created model fits a simple finite geometry model;  
generating a Radon transform to fit the simple finite geometry model;  
feeding the desired function through the Radon transform to generate weights; and  
training a multilayer perceptron of the neural network using the weights.

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1 6. An apparatus for training a first neural network, the apparatus comprising:  
2 a model generator to create a model for a desired function as a multi-dimensional  
3 function;  
4 a decision module to determine if the created model fits a simple finite geometry  
5 model, the decision module coupled to the model generator;  
6 a Radon transform generator to generate a Radon transform to fit the simple finite  
7 geometry model, the Radon transform generator coupled to the decision module;  
8 a feeder to feed the desired function through the Radon transform to generate  
9 weights, the feeder coupled to the decision module; and  
10 a training module to train a multilayer perceptron of the first neural network using  
11 the weights, the training module coupled to the Radon transform generator.

1 7. The apparatus of claim 6 wherein the Radon transform comprises a second neural  
2 network such that the second neural network is used to train the first neural network.

1 8. The apparatus of claim 7 wherein the first neural network and the second neural  
2 network are dual to each other.

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